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FILE 'BIOTECHNO' ENTERED AT 12:46:03 ON 24 NOV 2005
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FILE 'AGRICOLA' ENTERED AT 12:46:03 ON 24 NOV 2005

FILE 'WPIDS' ENTERED AT 12:46:03 ON 24 NOV 2005
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=> s l1
L2 35256 L1

=> s (resistan? or immun?) (s) L1
9 FILES SEARCHED...
11 FILES SEARCHED...
L3 2280 (RESISTAN? OR IMMUN?) (S) L1

=> s (phage# or bacteriophage# or sfi1 or sficl6 or sfi21) (s) L3
L4 421 (PHAGE# OR BACTERIOPHAGE# OR SFI1 OR SFICL6 OR SFI21) (S) L3

=> s (modifi? or mutat?)(s) L4
L5 83 (MODIFI? OR MUTAT?)(S) L4

=> s (orf90 or orf394 or orf269 orf1560) (s) L5
L6 0 (ORF90 OR ORF394 OR ORF269 ORF1560) (S) L5

=> dup rem l5
PROCESSING COMPLETED FOR L5
L7 53 DUP REM L5 (30 DUPLICATES REMOVED)

=> d ibib abs l7 1-53

L7 ANSWER 1 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2005:195796 USPATFULL
TITLE: Attaching substances to microorganisms
INVENTOR(S): Buist, Girbe, Groningen, NETHERLANDS
Leenhouts, Cornelis Johannes, Haren, NETHERLANDS
Venema, Gerard, Haren, NETHERLANDS
Kok, Jan, Groningen, NETHERLANDS

NUMBER KIND DATE

PATENT INFORMATION: US 2005169937 A1 20050804
APPLICATION INFO.: US 2003-654637 A1 20030903 (10)
RELATED APPLN. INFO.: Division of Ser. No. US 2000-554354, filed on 19 Jun
2000, PENDING A 371 of International Ser. No. WO
1998-NL655, filed on 12 Nov 1998

NUMBER DATE

PRIORITY INFORMATION: EP 1997-203539 19971113
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: TRASK BRITT, P.O. BOX 2550, SALT LAKE CITY, UT, 84110,
US
NUMBER OF CLAIMS: 28
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Page(s)
LINE COUNT: 2500
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to surface display of proteins on microorganisms
via the targeting and anchoring of heterologous proteins to the outer
surface of cells such as yeast, fungi, mammalian, plant cells, and
bacteria. The invention provides a proteinaceous substance comprising a

reactive group and at least one attaching peptide including a stretch of amino acids having a sequence corresponding to at least a part of the consensus amino acid sequence listed in FIG. 10 and further includes a method for attaching a proteinaceous substance to the cell wall of a microorganism comprising the use of the attaching peptide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 2 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2005:158196 USPATFULL

TITLE: Nucleic acid and amino acid sequences relating to
streptococcus pneumoniae for diagnostics and
therapeutics

INVENTOR(S): Doucette-Stamm, Lynn A., Framingham, MA, UNITED STATES
Bush, David, Somerville, MA, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2005136404 A1 20050623

APPLICATION INFO.: US 2003-617320 A1 20030710 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1998-107433, filed on 30 Jun
1998, PENDING

NUMBER DATE

PRIORITY INFORMATION: US 1997-51553P 19970702 (60)

US 1998-85131P 19980512 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Robert L. Spadafora, Genome Therapeutics Corporation,
100 Beaver Street, Waltham, MA, 02453, US

NUMBER OF CLAIMS: 28

EXEMPLARY CLAIM: 1

LINE COUNT: 12957

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides isolated polypeptide and nucleic acid sequences derived from *Streptococcus pneumonia* that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 3 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2004:203417 USPATFULL

TITLE: Alpha-galactosidase as food-grade genetic marker

INVENTOR(S): Moineau, Sylvain, Notre-Dame-du-Bon-Conseil, CANADA
Boucher, Isabelle, Quebec, CANADA

NUMBER KIND DATE

PATENT INFORMATION: US 2004157308 A1 20040812

APPLICATION INFO.: US 2004-471601 A1 20040402 (10)

WO 2002-CA462 20020405

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: OGILVY RENAULT, 1981 MCGILL COLLEGE AVENUE, SUITE 1600,
MONTREAL, QC, H3A2Y3

NUMBER OF CLAIMS: 15

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 5 Drawing Page(s)

LINE COUNT: 1386

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to a 4007 bp DNA fragment from the strain *Lactococcus raffinolactis* ATCC 43920 containing two genes. The first gene (named *aga*) codes for an enzyme with an alpha-galactosidase activity. The second gene (named *galR*) codes for a transcriptional regulator which would act as a regulator of *aga*. When present in a lactic acid bacterium such as *Lactococcus lactis*, this DNA fragment can

modify the sugar fermentation profile of the strain from melibiose-negative to melibiose-positive. The utilisation of a culture media containing melibiose as the sole carbon source and bromcresol purple as pH indicator allows the identification of the melibiose-fermenting bacteria as yellow colonies on a purple background.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2004:38579 USPATFULL

TITLE: Streptococcus pneumoniae polynucleotides and sequences

INVENTOR(S): Kunsch, Charles A., Norcross, GA, UNITED STATES

Choi, Gil H., Rockville, MD, UNITED STATES

Dillon, Patrick J., Carlsbad, CA, UNITED STATES

Rosen, Craig A., Laytonsville, MD, UNITED STATES

Barash, Steven C., Rockville, MD, UNITED STATES

Fannon, Michael R., Silver Spring, MD, UNITED STATES

Dougherty, Brian A., Killingworth, CT, UNITED STATES

PATENT ASSIGNEE(S): Human Genome Sciences, Inc., Rockville, MD, UNITED STATES, 20850 (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 2004029118 A1 20040212

APPLICATION INFO.: US 2002-158844 A1 20020603 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1997-961527, filed on 30 Oct 1997, GRANTED, Pat. No. US 6420135

NUMBER DATE

PRIORITY INFORMATION: US 1996-29960P 19961031 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE, ROCKVILLE, MD, 20850

NUMBER OF CLAIMS: 20

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 2 Drawing Page(s)

LINE COUNT: 9165

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of Streptococcus pneumoniae, polypeptide sequences encoded by the polynucleotide sequences, corresponding polynucleotides and polypeptides, vectors and hosts comprising the polynucleotides, and assays and other uses thereof. The present invention further provides polynucleotide and polypeptide sequence information stored on computer readable media, and computer-based systems and methods which facilitate its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 5 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2004:24675 USPATFULL

TITLE: Listeria inocua, genome and applications

INVENTOR(S): Kunst, Frederik, Ivry Sur Seine, FRANCE

Glaser, Philippe, Paris, FRANCE

NUMBER KIND DATE

PATENT INFORMATION: US 2004018514 A1 20040129

APPLICATION INFO.: US 2003-398221 A1 20030710 (10)

WO 2001-FR3061 20011004

NUMBER DATE

PRIORITY INFORMATION: FR 2000-12697 20001004

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP, 1300 I STREET, NW, WASHINGTON, DC, 20005

NUMBER OF CLAIMS: 87

EXEMPLARY CLAIM: 1

LINE COUNT: 8329

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention concerns a nucleotide sequence derived from *Listeria* inocua corresponding to a sequence selected among SEQ ID NO: 1 to SEQ ID NO: 11 and the comparative analysis of said genome with that of *Listeria monocytogenes*.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 6 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2004:250212 USPATFULL

TITLE: Nucleic acid and amino acid sequences relating to
Streptococcus pneumoniae for diagnostics and
therapeutics

INVENTOR(S): Doucette-Stamm, Lynn A., Framingham, MA, United States

Bush, David, Somerville, MA, United States

PATENT ASSIGNEE(S): Genome Therapeutics Corporation, Waltham, MA, United
States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6800744 B1 20041005

APPLICATION INFO.: US 1998-107433 19980630 (9)

NUMBER DATE

PRIORITY INFORMATION: US 1998-85131P 19980512 (60)

US 1997-51553P 19970702 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: GRANTED

PRIMARY EXAMINER: Brusca, John S.

ASSISTANT EXAMINER: Zhou, Shubo "Joe "

LEGAL REPRESENTATIVE: Genome Therapeutics Corporation

NUMBER OF CLAIMS: 14

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)

LINE COUNT: 11545

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides isolated polypeptide and nucleic acid sequences derived from *Streptococcus pneumonia* that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 7 OF 53 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-157114 [15] WPIDS

DOC. NO. CPI: C2004-062549

TITLE: New isolated nucleic acid molecule comprising all or a
portion of at least two Ter sites, useful for molecular
biology applications, e.g. cloning, selecting or
purifying a nucleic acid of interest or producing
single-stranded DNA.

DERWENT CLASS: B04 D16

INVENTOR(S): BYRD, D R N; HARTLEY, J L; YOUNG, A

PATENT ASSIGNEE(S): (INVI-N) INVITROGEN CORP

COUNTRY COUNT: 104

PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2004013290 A2 20040212 (200415)* EN 169

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS

LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK

DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH
 PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN
 YU ZA ZM ZW
 AU 2003257109 A1 20040223 (200453)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004013290	A2	WO 2003-US24064	20030804
AU 2003257109	A1	AU 2003-257109	20030804

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003257109	A1 Based on	WO 2004013290

PRIORITY APPLN. INFO: US 2002-403095P 20020814; US
 2002-400704P 20020805

AN 2004-157114 [15] WPIDS

AB WO2004013290 A UPAB: 20040302

NOVELTY - An isolated nucleic acid molecule engineered to comprise all or a portion of at least two Ter sites flanked by recombination sites, where the nucleic acid comprises an origin of replication and the Ter sites are arranged with respect to the origin of replication so that the sequence between the two Ter sites is not replicated, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a modified Ter-binding protein;
- (2) a support comprising at least one oligonucleotide that comprises all or a portion of a Ter site or a portion of a Ter-binding protein;
- (3) a method for directional cloning;
- (4) a method for attaching a nucleic acid to a solid support;
- (5) a method of improving the transfection efficiency of a nucleic acid molecule;
- (6) a composition comprising the nucleic acid molecule and all or a portion of one or more Ter-binding proteins attached to a support;
- (7) a method for improving the stability of a linear nucleic acid molecule in vivo;
- (8) a method for detecting a biological molecule;
- (9) a method for separating a nucleic acid containing all or a portion of one or more Ter sites from a mixture;
- (10) a kit comprising one or more molecules selected from the group consisting of a nucleic acid molecule engineered to comprise all or a portion of at least two Ter sites and a polypeptide comprising all or a portion of one or more Ter-binding proteins;
- (11) a method of juxtaposing a Ter site on a nucleic acid molecule with a second site on the nucleic acid molecule;
- (12) a method of cloning;
- (13) a method for synthesizing a double stranded nucleic acid molecule comprising all or a portion of one or more Ter sites;
- (14) a method for adding one or more Ter sites or portions to one or more nucleic acid molecules;
- (15) a method for producing one or more cDNA molecules or a population of cDNA molecules;
- (16) a method for synthesizing one or more nucleic acid molecules comprising all or a portion of one or more Ter sites; and
- (17) a method of cloning two DNA fragments into one vector in one reaction.

USE - The nucleic acid is useful in molecular biology applications. It is useful for cloning, for selecting a nucleic acid of interest, for purifying a nucleic acid of interest, for producing single-stranded DNA, for juxtaposing at least two sites of a polynucleotide, for maintaining topology of a nucleic acid molecule, for detecting target sequences and other biomolecules or for immobilizing polynucleotides onto a support.

Dwg.0/16

DOC. NO. CPI: C2004-220308
TITLE: Novel envelope protein of Thermophilus phage, useful as
vector to integrate gene encoding heat-resistant protein
in host cell, and thus in producing heat-resistant
protein.
DERWENT CLASS: B04 D16
PATENT ASSIGNEE(S): (OSAG) OSAKA GAS CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2004236621	A	20040826 (200459)*	19		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2004236621	A	JP 2003-31297	20030207

PRIORITY APPLN. INFO: JP 2003-31297 20030207
AN 2004-608226 [59] WPIDS
AB JP2004236621 A UPAB: 20040915

NOVELTY - An envelope protein (I) of Thermophilus phage, comprising a sequence of 138 (S1) and 217 (S2) amino acids fully defined in the specification, and comprising one or more deletion, substitution, insertion or addition, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a DNA (II) encoding (I), comprising a gene sequence of 417 (S3) and 654 (S4) nucleotides fully defined in the specification, DNA hybridizing under stringent conditions with (S3) and (S4), DNA encoding (I), and DNA hybridizing to the DNA that encodes (I);

(2) producing (M1) heat-resistant protein, involves integrating the gene encoding (I) in DNA of Thermophilus phage, introducing the recombinant DNA obtained by above integrating step to a host cell, and proliferating Thermophilus phage, which involves expressing resistant protein on the cell envelope of the host cell;

(3) DNA (III) of Thermophilus phage containing gene encoding (I) to express on the cell envelope of Thermophilus phage;

(4) host cell (IV) containing (III);

(5) heat-resistant protein (V) obtained by (M1);

Thermophilus phage (VI) which expresses heat resistant protein on the cell envelope; and

(6) producing (M2) heat ***resistant*** protein, involves integrating the gene encoding (I) in DNA of ***Thermophilus***, generating ***mutation*** to recombinant DNA obtained at the integrating step, introducing obtained ***mutated*** DNA to the host cell, and proliferating ***Thermophilus*** ***phage*** which involves expressing the protein on the cell envelope of the host cell.

USE - (II) encoding (I) is useful in producing heat-resistant protein (claimed).

ADVANTAGE - (II) encoding (I) efficiently produces heat-resistant protein in large quantities. The recovery of the protein is easy. The heat-resistant proteins exhibit function even at 70 deg. C or above.

DESCRIPTION OF DRAWING(S) - The figure is a model showing the integration of foreign gene in a phage and expressing heat-resistant protein on the envelope protein.

Dwg.3/3

L7 ANSWER 9 OF 53 FSTA COPYRIGHT 2005 IFIS on STN
ACCESSION NUMBER: 2004:P1655 FSTA
TITLE: Selection and properties of Streptococcus thermophilus
mutants deficient in urease.
AUTHOR: Monnet, C.; Pernoud, S.; Sepulchre, A.; Fremaux, C.;
Corrieu, G.
CORPORATE SOURCE: Unite Mixte de Recherche Genie et Microbiol. des
Procedes Alimentaires, INRA, 78850 Thiverval-Grignon,
France. E-mail monnet(a)grignon.inra

SOURCE: Journal of Dairy Science, (2004) 87 (6) 1634-1640, 19
ref.
ISSN: 0022-0302

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Natural variations in the urea content of milk have a detrimental effect on the regularity of acidification by *Streptococcus thermophilus* strains used in dairy processes. This study sought to investigate the stability, acidifying activity and bacteriophage resistance of 4 urease-deficient mutants of *S. thermophilus*. Using an improved screening medium, mutants were selected from 4 different parent strains after mutagen treatment and by spontaneous mutation. Most mutants were stable and had a phage sensitivity profile similar to that of their parent strain. However, some mutants contained detrimental secondary mutations, as their acidifying activity was lower than that of the parent strain cultivated in the presence of the urease inhibitor fluorofamide. The proportion of this type of mutant was much lower among spontaneous mutants than among mutants selected after mutagen treatment. It is concluded that utilization of urease-deficient mutants in dairy processes may have several advantages, such as an increase in acidification, an improved regularity of acidification, and a lower production of ammonia in whey.

L7 ANSWER 10 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2003:23612 USPATFULL
TITLE: Thermus promoters for gene expression
INVENTOR(S): Peredeltchouk, Mikhail, Chicago, IL, UNITED STATES
Vonstein, Veronika, Chicago, IL, UNITED STATES
Demirjian, David, Hinsdale, IL, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003017452 A1 20030123
APPLICATION INFO.: US 2000-748463 A1 20001226 (9)
RELATED APPLN. INFO.: Continuation of Ser. No. US 1999-390867, filed on 7 Sep 1999, PATENTED
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MCDONNELL BOEHNNEN HULBERT & BERGHOFF, 300 South Wacker Drive, Chicago, IL, 60606
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 1488

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a system for identifying, isolating and utilizing promoter elements useful for expression of nucleotide sequences and the proteins encoded thereby in a thermophile. In one embodiment, a recombinant DNA molecule is provided, and comprises a reporter sequence, a putative thermophile promoter, a selectable marker sequence, and a 3' and a 5' DNA targeting sequence that are together capable of causing integration of at least a portion of said DNA molecule into the genome of a thermophile. Further, within the recombinant DNA, the reporter sequence is under the transcriptional control of a promoter which functions in a thermophile to form a promoter/reporter cassette, the promoter/reporter cassette is flanked by said 3' and said 5' DNA targeting sequences, and the promoter/reporter cassette is positioned in the opposite orientation of the DNA targeting sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 11 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2003:240330 USPATFULL
TITLE: Nucleic acid and amino acid sequences relating to *Enterococcus faecalis* for diagnostics and therapeutics
INVENTOR(S): Doucette-Stamm, Lynn A., 14 Flanagan Dr., Framingham, MA, United States 01701
Bush, David, 205 Holland St., Somerville, MA, United States 02144

NUMBER KIND DATE

PATENT INFORMATION: US 6617156 B1 20030909
APPLICATION INFO.: US 1998-134000 19980813 (9)

NUMBER DATE

PRIORITY INFORMATION: US 1997-55778P 19970815 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Mosher, Mary E.
LEGAL REPRESENTATIVE: Genome Therapeutics Corporation
NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 1,5,14
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 13738

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides isolated polypeptide and nucleic acid sequences derived from *Enterococcus faecalis* that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 12 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2003:190673 USPATFULL

TITLE: *Staphylococcus aureus* polynucleotides and sequences

INVENTOR(S): Kunsch, Charles A., Norcross, GA, United States

Choi, Gil H., Rockville, MD, United States

Barash, Steven, Rockville, MD, United States

Dillon, Patrick J., Carlsbad, CA, United States

Fannon, Michael R., Silver Spring, MD, United States

Rosen, Craig A., Laytonsville, MD, United States

PATENT ASSIGNEE(S): Human Genome Sciences, Inc., Rockville, MD, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6593114 B1 20030715
APPLICATION INFO.: US 1997-956171 19971020 (8)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1997-781986, filed on 3 Jan 1997

NUMBER DATE

PRIORITY INFORMATION: US 1996-9861P 19960105 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Duffy, Patricia A.
LEGAL REPRESENTATIVE: Human Genome Sciences, Inc.
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 7835

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of *Staphylococcus aureus*, polypeptide sequences encoded by the polynucleotide sequences, corresponding polynucleotides and polypeptides, vectors and hosts comprising the polynucleotides, and assays and other uses thereof. The present invention further provides polynucleotide and polypeptide sequence information stored on computer readable media, and computer-based systems and methods which facilitate its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 13 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2003:169096 USPATFULL
TITLE: Nucleic acid sequences and expression system relating
to Enterococcus faecium for diagnostics and
therapeutics
INVENTOR(S): Doucette-Stamm, Lynn A., Framingham, MA, United States
Bush, David, Somerville, MA, United States
PATENT ASSIGNEE(S): Genome Therapeutics Corporation, Waltham, MA, United
States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6583275	B1	20030624
APPLICATION INFO.:	US 1998-107532		19980630 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-85598P	19980514 (60)
	US 1997-51571P	19970702 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Marschel, Ardin H.	
LEGAL REPRESENTATIVE:	Genome Therapeutics Corporation	
NUMBER OF CLAIMS:	34	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	15265	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides isolated polypeptide and nucleic acid sequences derived Enterococcus faecium that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 14 OF 53 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:724637 CAPLUS
DOCUMENT NUMBER: 140:160320
TITLE: Selection of bacteriophage-resistant mutants of
Streptococcus thermophilus
AUTHOR(S): Viscardi, M.; Capparelli, R.; Di Matteo, R.;
Carminati, D.; Giraffa, G.; Iannelli, D.
CORPORATE SOURCE: University of Naples "Federico II", Naples, 80055,
Italy
SOURCE: Journal of Microbiological Methods (2003), 55(1),
109-119
CODEN: JMIMDQ; ISSN: 0167-7012
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Phage-resistant mutants have been isolated from Streptococcus thermophilus. Selection was carried out using anti-phage antibodies or Hoechst 33258-labeled phages. Two mutants out of eight tested displayed reduced acidifying capacity. Selection of the bacteria that extruded more rapidly the fluorochrome 5-6-carboxyfluorescein diacetate (CFDA) restored the acidifying capacity of these two mutants to the level of the parental strains. Mutants displaying phage resistance and good acidifying capacity were obtained in 4-5 days. New phages that are able to overcome the protection mechanisms of the existing bacteria arise continually in the dairy environment. The procedures described here permit to replace promptly the starter culture susceptible to newly emerged phages with a resistant one.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 53 LIFESCI COPYRIGHT 2005 CSA on STN DUPLICATE 1
ACCESSION NUMBER: 2003:93012 LIFESCI
TITLE: Sequence analysis and characterization of plasmids from
Streptococcus thermophilus

AUTHOR: Geis, A.*; El Demerdash, H.A.M.; Heller, K.J.
CORPORATE SOURCE: Federal Dairy Research Centre, Institute for Microbiology,
Hermann-Weigmann-Strasse 1, 24103 Kiel, Germany
Communicated by R. Bernander; E-mail: geis@bafm.de
SOURCE: Plasmid, (20030700) vol. 50, no. 1, pp. 53-69.
ISSN: 0147-619X.
DOCUMENT TYPE: Journal
FILE SEGMENT: G; J
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The nucleotide sequences of eight plasmids isolated from seven *Streptococcus thermophilus* strains have been determined. Plasmids pSt04, pER1-1, and pJ34 are related and replicate via a rolling circle mechanism. Plasmid pJ34 encodes for a replication initiation protein (RepA) and a small polypeptide with unknown function. Plasmids pSt04 and pER1-1 carry in addition to repA genes coding for small heat shock proteins (sHsp). Expression of these proteins is induced at elevated temperatures or low pH and increases the thermo- and acid ***resistance***. Plasmids pER1-2 and pSt22-2 show identical sequences with five putative open reading frames (ORFs). The gene products of ORF1 and ORF4 reveal some similarities to transposon encoded proteins of *Bacillus subtilis* and Tn916. ORF1 of plasmid pSt106 encodes a protein similar to resolvases of different Gram-positive bacteria. Integrity of ORF2 and 3, encoding a putative DNA primase and a replication protein, is essential for replication. ORF1 to 3 of plasmid pSt08, which are organized in a tricistronic operon, encode a RepA protein, an adenosine-specific methyltransferase, and a type II restriction endonuclease. Another type II restriction- ***modification*** (R/M) system is encoded on plasmid pSt0 which is highly similar to those encoded on lactococcal plasmid pHW393 and *B. subtilis* plasmid pXH13. Plasmid-free derivatives of strains St0 and St08 show increased ***phage*** sensitivity, indicating that in the wild-type strains the R/M systems are functionally expressed. Recombinant plasmids based on the replicons of plasmids pSt04, pJ34, pSt106, pSt08, and pSt0, are able to replicate in *Lactococcus lactis* and *B. subtilis*, respectively, whereas constructs carrying pER1-2 only replicate in *S. thermophilus*.

L7 ANSWER 16 OF 53 FROSTI COPYRIGHT 2005 LFRA on STN
ACCESSION NUMBER: 612987 FROSTI
TITLE: Bacteriophages in cheesemaking.
AUTHOR: Powell I.
SOURCE: Australian Dairy Foods, 2003, (April), 24 (5), 26-28
(0 ref.)
Published by: Indigo Arch Pty Ltd. Address: PO Box
629, Malvern, Victoria 3144, Australia. Telephone:
+61 (3) 9576 1275. Fax: +61 (3) 9576 1276. Email:
publisher@indigoarch.com.au
ISSN: 0157-7964

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The structure, characteristics and mechanism of action of ***bacteriophages*** (***phages***), which are viruses that infect bacteria, and their relevance to the cheesemaking industry are considered. Examples are given of ***phages*** that infect strains of *Lactococcus lactis* and *Streptococcus thermophilus*. ***Phages*** with altered properties can arise by ***mutation*** or by natural genetic recombination between different ***phages*** of the same species. ***Phages*** that infect starter bacteria may be present in raw milk, and, once they are in a cheese factory, they can become part of the local ecosystem, as well as being part of a broader environment including other dairy factories. Techniques based on the polymerase chain reaction have been used to obtain genetic fingerprints of lactococcal ***phages*** of the most common species. The various stages of ***phage*** infection in a cheese factory and methods for reducing infection are discussed. The possibility of developing ***phage*** - ***resistant*** starter cultures is considered. As yet, safety concerns have prevented the use of GMOs as starter organisms with reduced ***phage*** sensitivity.

L7 ANSWER 17 OF 53 USPATFULL on STN

ACCESSION NUMBER: 2002:221971 USPATFULL
TITLE: ENTEROCOCCUS FAECALIS POLYNUCLEOTIDES AND POLYPEPTIDES
INVENTOR(S): KUNSCH, CHARLES A., ATLANTA, GA, UNITED STATES
DILLON, PATRICK J., CARLSBAD, CA, UNITED STATES
BARASH, STEVEN, ROCKVILLE, MD, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2002120116 A1 20020829
APPLICATION INFO.: US 1998-70927 A1 19980504 (9)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,
ROCKVILLE, MD, 20850

NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 13315

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of
Enterococcus faecalis, polypeptide sequences encoded by the
polynucleotide sequences, corresponding polynucleotides and
polypeptides, vectors and hosts comprising the polynucleotides, and
assays and other uses thereof. The present invention further provides
polynucleotide and polypeptide sequence information stored on computer
readable media, and computer-based systems and methods which facilitate
its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 18 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2002:55159 USPATFULL
TITLE: STREPTOCOCCUS PNEUMONIAE POLYNUCLEOTIDES AND SEQUENCES
INVENTOR(S): KUNSCH, CHARLES A., GAITHERSBURG, MD, UNITED STATES
CHOI, GIL H., ROCKVILLE, MD, UNITED STATES
DILLON, PATRICK J., CARLSBAD, CA, UNITED STATES
ROSEN, CRAIG A., LAYTONSVILLE, MD, UNITED STATES
BARASH, STEVEN C., ROCKVILLE, MD, UNITED STATES
FANNON, MICHAEL R., SILVER SPRING, MD, UNITED STATES
DOUGHERTY, BRIAN A., MT. AIRY, MD, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2002032323 A1 20020314
US 6420135 B2 20020716
APPLICATION INFO.: US 1997-961527 A1 19971030 (8)

NUMBER DATE

PRIORITY INFORMATION: US 1996-29960P 19961031 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,
ROCKVILLE, MD, 20850

NUMBER OF CLAIMS: 20
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 7752

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of
Streptococcus pneumoniae, polypeptide sequences encoded by the
polynucleotide sequences, corresponding polynucleotides and
polypeptides, vectors and hosts comprising the polynucleotides, and
assays and other uses thereof. The present invention further provides
polynucleotide and polypeptide sequence information stored on computer
readable media, and computer-based systems and methods which facilitate
its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 19 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2002:24169 USPATFULL
TITLE: Methods for isolation of thermophile promoters
INVENTOR(S): Peredultchuk, Mikhail, Chicago, IL, United States
Vonstein, Veronica, Chicago, IL, United States
Demirjian, David, Hinsdale, IL, United States
PATENT ASSIGNEE(S): Thermogen, Inc., United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6344327 B1 20020205
APPLICATION INFO.: US 2000-548260 20000412 (9)
RELATED APPL. INFO.: Division of Ser. No. US 1999-390867, filed on 7 Sep
1999

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Guzo, David
ASSISTANT EXAMINER: Leffers, Jr., Gerald G.
LEGAL REPRESENTATIVE: McDonnell Boehnen Hulbert & Berghoff
NUMBER OF CLAIMS: 18
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1434
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a system for identifying, isolating and utilizing promoter elements useful for expression of nucleotide sequences and the proteins encoded thereby in a thermophile. In one embodiment, a recombinant DNA molecule is provided, and comprises a reporter sequence, a putative thermophile promoter, a selectable marker sequence, and a 3' and a 5' DNA targeting sequence that are together capable of causing integration of at least a portion of said DNA molecule into the genome of a thermophile. Further, within the recombinant DNA, the reporter sequence is under the transcriptional control of a promoter which functions in a thermophile to form a promoter/reporter cassette, the promoter/reporter cassette is flanked by said 3' and said 5' DNA targeting sequences, and the promoter/reporter cassette is positioned in the opposite orientation of the DNA targeting sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 20 OF 53 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2001:168151 CAPLUS
DOCUMENT NUMBER: 134:217998
TITLE: Phage resistant bacteria
INVENTOR(S): Bruessow, Harald; Lucchini, Sacha
PATENT ASSIGNEE(S): Societe des Produits Nestle S.A., Switz.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001016329	A2	20010308	WO 2000-EP7696	20000808
WO 2001016329	A3	20010614		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1212425	A2	20020612	EP 2000-960410	20000808
EP 1212425	B1	20051012		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, SI, LT, LV, FI, RO, MK, CY, AL
PRIORITY APPLN. INFO.: GB 1999-20431 A 19990827
WO 2000-EP7696 W 20000808

AB The invention relates to an *Streptococcus thermophilus* bacterium which is resistant to attack by at least one bacteriophage, a method of prodn. of the bacterium and a compn. which comprises the bacterium. The bacterium comprises a modification of the .phi.Sfi21 prophage or the bacterial genome which disrupts expression of a gene which is essential to a bacteriophage, but not essential to the bacteria.

L7 ANSWER 21 OF 53 USPATFULL on STN
ACCESSION NUMBER: 2001:163028 USPATFULL
TITLE: Thermus promoters for gene expression
INVENTOR(S): Peredultchuk, Mikhail, Chicago, IL, United States
Vonstein, Veronica, Chicago, IL, United States
Demirjian, David C., Hinsdale, IL, United States
PATENT ASSIGNEE(S): Thermogen, Inc., Chicago, IL, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6294358 B1 20010925
APPLICATION INFO.: US 1999-390867 19990907 (9)
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Guzo, David
ASSISTANT EXAMINER: Leffers, Jr., Gerald G.
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 5
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 4 Drawing Page(s)
LINE COUNT: 1232
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a system for identifying, isolating and utilizing promoter elements useful for expression of nucleotide sequences and the proteins encoded thereby in a thermophile. In one embodiment, a recombinant DNA molecule is provided, and comprises a reporter sequence, a putative thermophile promoter, a selectable marker sequence, and a 3' and a 5' DNA targeting sequence that are together capable of causing integration of at least a portion of said DNA molecule into the genome of a thermophile. Further, within the recombinant DNA, the reporter sequence is under the transcriptional control of a promoter which functions in a thermophile to form a promoter/reporter cassette, the promote/reporter cassette is flanked by said 3' and said 5' DNA targeting sequences, and the promoter/reporter cassette is positioned in the opposite orientation of the DNA targeting sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 22 OF 53 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2001-335942 [35] WPIDS
DOC. NO. CPI: C2001-103850
TITLE: Producing nucleotides with modified properties, comprises forming double-stranded polynucleotides from single-stranded molecules, degrading double-stranded molecules and template-directed single-strand synthesis.
DERWENT CLASS: B04 D16
INVENTOR(S): EIGEN, M; KETTLING, U; KOLTERMANN, A
PATENT ASSIGNEE(S): (DIRE-N) DIREVO BIOTECH AG; (PLAC) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2001034835 A2 20010517 (200135)* EN 44
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC

LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
 SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
 DE 19953854 A1 20010628 (200138)
 AU 2001015201 A 20010606 (200152)
 DE 19953854 C2 20020117 (200207)
 EP 1230390 A2 20020814 (200261) EN
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
 RO SE SI TR
 JP 2003513652 W 20030415 (200328) 59
 EP 1230390 B1 20040922 (200462) EN
 R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
 DE 60014150 E 20041028 (200471)
 US 6821758 B1 20041123 (200477)
 ES 2223613 T3 20050301 (200519)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001034835	A2	WO 2000-EP11049	20001108
DE 19953854	A1	DE 1999-1053854	19991109
AU 2001015201	A	AU 2001-15201	20001108
DE 19953854	C2	DE 1999-1053854	19991109
EP 1230390	A2	EP 2000-977514	20001108
		WO 2000-EP11049	20001108
JP 2003513652	W	WO 2000-EP11049	20001108
		JP 2001-536760	20001108
EP 1230390	B1	EP 2000-977514	20001108
		WO 2000-EP11049	20001108
DE 60014150	E	DE 2000-00014150	20001108
		EP 2000-977514	20001108
		WO 2000-EP11049	20001108
US 6821758	B1	US 2000-708497	20001109
ES 2223613	T3	EP 2000-977514	20001108

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001015201	A Based on	WO 2001034835
EP 1230390	A2 Based on	WO 2001034835
JP 2003513652	W Based on	WO 2001034835
EP 1230390	B1 Based on	WO 2001034835
DE 60014150	E Based on	EP 1230390
	Based on	WO 2001034835
ES 2223613	T3 Based on	EP 1230390

PRIORITY APPLN. INFO: DE 1999-19953854 19991109

AN 2001-335942 [35] WPIDS

AB WO 200134835 A UPAB: 20010625

NOVELTY - Producing polynucleotide molecules (I) with modified properties, involves providing a population (P) of single-stranded polynucleotide molecules, forming double-stranded polynucleotide molecules (DP) of (P), partial and exonucleolytic single-strand degradation of DP, and template-directed single-strand synthesis starting from the degraded ends of the partially degraded double strands.

DETAILED DESCRIPTION - Producing polynucleotide molecules (I) with modified properties, where at least one cycle, involves:

- (a) providing a population (P) of single-stranded polynucleotide molecules, where the individual polynucleotides of the population have both homologous and heterologous sequence segments, and strands are also contained that are each completely or partially complementary to these single strands;
- (b) forming double-stranded polynucleotide molecules (DP) of (P), comprising double strands with different heterologous sequence segments;
- (c) partial, exonucleolytic single-strand degradation of DP; and
- (d) template-directed single-strand synthesis starting from the degraded ends of the partially degraded double strands produced, where degradation of DP and template-directed single-strand synthesis are carried out subsequently or contemporaneously.

An INDEPENDENT CLAIM is also included for a kit containing components and instructions for carrying out the new method.

USE - The method is useful for production of biopolymers e.g., polynucleotide molecules with modified properties (claimed).

ADVANTAGE - Two or more different heterologous sequence segments located on two different single-stranded polynucleotides to be joined to new semiconservative single-stranded polynucleotides, is possible. Semiconservative single-stranded polynucleotides both with identical and different ratios of conservative and new sequence segments can be produced depending on the controlled execution of the exonucleolytic degradation.
Dwg.0/8

L7 ANSWER 23 OF 53 CABA COPYRIGHT 2005 CABI on STN DUPLICATE 3

ACCESSION NUMBER: 2002:69656 CABA

DOCUMENT NUMBER: 20023031796

TITLE: Characterization of a novel type II
restriction-modification system, Sth368I, encoded by
the integrative element ICES11 of Streptococcus
thermophilus CNRZ368

AUTHOR: Burrus, V.; Bontemps, C.; Decaris, B.; Guedon, G.

CORPORATE SOURCE: Laboratoire de Genetique et Microbiologie (INRA
UA952), Faculte des Sciences, Universite Henri
Poincare (Nancy 1), 54506 Vandoeuvre-les-Nancy,
France. decaris@nancy.inra.fr

SOURCE: Applied and Environmental Microbiology, (2001) Vol.
67, No. 4, pp. 1522-1528. 38 ref.
Publisher: American Society for Microbiology (ASM).
Washington
ISSN: 0099-2240

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 20020405

Last Updated on STN: 20020405

AB A novel type II restriction and ***modification*** (R-M) system, Sth368I, which confers ***resistance*** to [phi]ST84, was found in Streptococcus ***thermophilus*** CNRZ368 but not in the very closely related strain A054. Partial sequencing of the integrative conjugative element ICES11, carried by S. ***thermophilus*** CNRZ368 but not by A054, revealed a divergent cluster of 2 genes, sth368IR and sth368IM. The protein sequence encoded by sth368IR is related to the type II endonucleases R.LlaKR2I and R.Sau3AI, which recognize and cleave the sequence 5[prime]-GATC-3[prime]. The protein sequence encoded by sth368IM is very similar to numerous type II 5-methylcytosine methyltransferases, including M.LlaKR2I and M.Sau3AI. Cell extracts of CNRZ368 but not A054 were found to cleave at the GATC site. Furthermore, the C residue of the sequence 5[prime]-GATC-3[prime] was found to be methylated in CNRZ368 but not in A054. Cloning and integration of a copy of sth368IR and sth368IM in the A054 chromosome confers on this strain phenotypes similar to those of CNRZ368, i.e., ***phage*** ***resistance***, endonuclease activity of cell extracts, and methylation of the sequence 5[prime]-GATC-3[prime]. Disruption of sth368IR removes ***resistance*** and restriction activity. We conclude that ICES11 encodes an R-M system, Sth368I, which recognizes the sequence 5[prime]-GATC-3[prime] and is related to the Sau3AI and LlaKR2I restriction systems.

L7 ANSWER 24 OF 53 LIFESCI COPYRIGHT 2005 CSA on STN DUPLICATE 4

ACCESSION NUMBER: 2002:23208 LIFESCI

TITLE: Comparative Genomics Reveals Close Genetic Relationships
between Phages from Dairy Bacteria and Pathogenic
Streptococci: Evolutionary Implications for Prophage-Host
Interactions

AUTHOR: Desiere, F.; Mcshan, W.M.; Van Sinderen, D.; Ferretti,
J.J.; Bruessow, H.*

CORPORATE SOURCE: Nestle Research Center, Nestec Ltd., Vers-chez-les-Blanc,
CH Lausanne 26, Switzerland; E-mail:
harald.bruessow@rdls.nestle.com

SOURCE: Virology, (20010930) vol. 288, no. 2, pp. 325-341.
ISSN: 0042-6822.

DOCUMENT TYPE: Journal

FILE SEGMENT: V; G; J

LANGUAGE: English

SUMMARY LANGUAGE: English

AB The genome of the highly pathogenic M1 serotype *Streptococcus pyogenes* isolate SF370 contains eight prophage elements. Only prophage SF370.1 could be induced by mitomycin C treatment. Prophage SF370.3 showed a 33.5-kb-long genome that closely resembled the genome organization of the cos-site temperate Siphovirus r1t infecting the dairy bacterium *Lactococcus lactis*. The two- ***phage*** genomes shared between 60 and 70% nucleotide sequence identity over the DNA packaging, head and tail genes. Analysis of the SF370.3 genome revealed ***mutations*** in the replisome organizer gene that may prevent the induction of the prophage. The ***mutated*** ***phage*** replication gene was closely related to a virulence marker identified in recently emerged M3 serotype *S. pyogenes* strains in Japan. This observation suggests that prophage genes confer selective advantage to the lysogenic host. SF370.3 encodes a hyaluronidase and a DNase that may facilitate the spreading of *S. pyogenes* through tissue planes of its human host. Prophage SF370.2 showed a 43-kb-long genome that closely resembled the genome organization of pac-site temperate Siphoviridae infecting the dairy bacteria *S. thermophilus* and *L. lactis*. Over part of the structural genes, the similarity between SF370.2 and *S. thermophilus* ***phage*** O1205 extended to the nucleotide sequence level. SF370.2 showed two probable inactivating ***mutations***: one in the replisome organizer gene and another in the gene encoding the portal protein. Prophage SF370.2 also encodes a hyaluronidase and in addition two very likely virulence factors: prophage-encoded toxins acting as superantigens that may contribute to the ***immune*** deregulation observed during invasive streptococcal infections. The superantigens are encoded between the ***phage*** lysin and the right attachment site of the prophage genome. The genes were nearly sequence identical with a DNA segment in *S. equi*, suggesting horizontal gene transfer. The trend for prophage genome inactivation was even more evident for the remaining five prophage sequences that showed massive losses of prophage DNA. In these prophage remnants only 13-0.3 kb of putative prophage DNA was detected. We discuss the genomics data from *S. pyogenes* strain SF370 within the framework of Darwinian coevolution of prophages and lysogenic bacteria and suggest elements of genetic cooperation and elements of an arms race in this host-parasite relationship. Copyright 2001 Academic Press.

L7 ANSWER 25 OF 53 FROSTI COPYRIGHT 2005 LFRA on STN

ACCESSION NUMBER: 578071 FROSTI

TITLE: Traditional and molecular approaches to improving bacteriophage resistance of Cheddar and Mozzarella cheese starters.

AUTHOR: Coffey A.; Stokes D.; Fitzgerald G.F.; Ross R.P.

SOURCE: Irish Journal of Agricultural and Food Research, 2001, (December), 40 (2), 239-270 (many ref.)
Published by: Teagasc Address: 19 Sandymount Avenue, Dublin 4, Ireland
ISSN: 0791-6833

DOCUMENT TYPE: Journal

LANGUAGE: English

SUMMARY LANGUAGE: English

AB ***Bacteriophages*** cause significant losses of cheese starter bacteria, particularly in continuous-culture processes. This review considers the development of starter systems for Cheddar and Mozzarella cheeses; practical strategies to minimize problems with ***bacteriophages*** in these starters; ***phages*** of *Lactococcus lactis* and *Streptococcus thermophilus*; bacterial ***phage*** defence mechanisms (***phage*** adsorption inhibition, restriction and ***modification***, ***phage*** abortive infection, and engineered ***resistance*** mechanisms); strain improvement by genetic ***modification*** ('self-cloning' techniques); introduction of ***phage*** ***resistance*** plasmids to cheese starters; and the effects of ***phage*** ***resistance*** systems on ***phage*** development.

L7 ANSWER 26 OF 53 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER: 2000-594339 [56] WPIDS

DOC. NO. CPI: C2000-177538
 TITLE: Nucleotide base sequencing method is used for direct
 nucleic acid sequencing with a polymerase, nucleic acid
 sample, primers and four different labeled nucleotides,
 without the need for amplification.
 DERWENT CLASS: B04 D16
 INVENTOR(S): ARMES, N A; STEMPLE, D L
 PATENT ASSIGNEE(S): (ASMS-N) ASM SCI INC
 COUNTRY COUNT: 92
 PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

 WO 2000053805 A1 20000914 (200056)* EN 50
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL
 OA PT SD SE SL SZ TZ UG ZW
 W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE
 ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
 LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK
 SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 AU 2000031746 A 20000928 (200067)
 EP 1159453 A1 20011205 (200203) EN
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
 RO SE SI
 JP 2002537858 W 20021112 (200275) 64
 AU 2005201777 A1 20050519 (200537)#

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000053805	A1	WO 2000-GB873	20000310
AU 2000031746	A	AU 2000-31746	20000310
EP 1159453	A1	EP 2000-909464	20000310
		WO 2000-GB873	20000310
JP 2002537858	W	JP 2000-603426	20000310
		WO 2000-GB873	20000310
AU 2005201777	A1 Div ex	AU 2000-31746	20000310
		AU 2005-201777	20050428

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000031746	A Based on	WO 2000053805
EP 1159453	A1 Based on	WO 2000053805
JP 2002537858	W Based on	WO 2000053805

PRIORITY APPLN. INFO: US 1999-266187 19990310; AU
 2005-201777 20050428

AN 2000-594339 [56] WPIDS

AB WO 200053805 A UPAB: 20001106

NOVELTY - Nucleotide base sequencing method using immobilized polymerase,
 nucleic acid sample, different oligonucleotide primers and differentially
 labeled four different nucleotides, is new.

DETAILED DESCRIPTION - Method of nucleotide base sequencing
 comprises:

- (a) immobilizing a polymerase on a solid support;
- (b) providing a nucleic acid sample and different oligonucleotide
 primers, where the nucleic acid sample hybridizes to an oligonucleotide
 primer;
- (c) providing four different nucleotides, each differentially-labeled
 with a detachable labeling group and blocked at the 3' portion with a
 detachable blocking group, where the polymerase extends the primer
 hybridized to the nucleic acid sample with the differentially-labelled
 nucleotide that is complementary to the sample nucleic acid;
- (d) removing nucleotides that have not been incorporated in the
 primer;
- (e) detecting the labeled nucleotide incorporated into the elongating
 primer, and identifying the complement of the labeled 3'-blocked

nucleotide;

(f) separating and then removing the 3' blocking group and the labeling group from the incorporated nucleotide;

(g) confirming separation and removal of the 3' blocking group from the nucleotide incorporated in the primer; and

(h) repeating steps (c) to (f) until either no new nucleotides are incorporated in step (c) or the 3' blocking group persists in not being separated and removed in step (f), where the order in which the labeled nucleotide in step (d) are detected corresponds to the complement of the sequence of at least a portion of the nucleic acid sample.

INDEPENDENT CLAIMS are also included for the following:

(1) an immobilized polymerase system (I) for contacting nucleic acid comprising a reaction center comprising a solid support and a polymerase immobilized on the solid support, a nucleic acid sample and an oligonucleotide primer capable of hybridizing to the nucleic acid sample; and

(2) an array of immobilized polymerase systems comprising (I) where the polymerase is immobilized onto a solid support with sufficient physical separation to permit resolution.

USE - The method is useful for direct nucleotide base sequencing (claimed) for genetic diagnosis in medicine e.g. diagnosing carriers of harmful genetic traits, identifying mutant genes, analyzing cancers which begin with specific alterations in the genome of a cell, whole genome sequencing and forensic applications.

ADVANTAGE - Unlike prior art sequencing method, the method is rapid, economical and eliminates the need for amplification, prior knowledge of part of the nucleotide sequence to generate sequencing primers and labor-intensive electrophoresis techniques.

Dwg.0/8

L7 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 2000:661102 CAPLUS

DOCUMENT NUMBER: 134:15093

TITLE: Broad-range bacteriophage resistance in *Streptococcus thermophilus* by insertional mutagenesis

AUTHOR(S): Lucchini, Sacha; Sidoti, Josette; Brussow, Harald

CORPORATE SOURCE: Nestle Research Centre, Nestec Ltd., Lausanne, CH-1000, Switz.

SOURCE: Virology (2000), 275(2), 267-277

CODEN: VIRLAX; ISSN: 0042-6822

PUBLISHER: Academic Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB *Streptococcus thermophilus* is a lactic acid bacterium used in industrial milk fermn. To obtain phage-resistant starters, *S. thermophilus* strain Sfi1 was submitted to mutagenesis with the thermolabile insertional vector pG+host9:ISS1 followed by a challenge with the lytic *S. thermophilus* phage Sfi19. Vector insertions into four distinct sites led to a phage-resistance phenotype. Three mutants were characterized further. They were protected against the homologous challenging phage and 14 heterologous phages. All three mutants adsorbed phages. No intracellular phage DNA synthesis was obsd. in mutants R7 and R71, while mutant R24 showed a delayed and diminished phage DNA synthesis compared to the parental Sfi1 strain. In mutant R7 a short deletion occurred next to the insertion site which removed the upstream sequences and the 15 initial codons from orf 394, encoding a likely transmembrane protein. Analogy with other phage systems suggests an involvement of this protein in the phage DNA injection process. In mutant R24 the vector was inserted into orf 269 predicting an oxido-reductase. When the vector sequence was removed via homologous recombination across the duplicated insertion elements, mutant R24 returned to the phage susceptibility of the parental strain. This observation suggested that inactivation of orf 269 was not crucial for the resistance phenotype. A gene encoding a likely restriction subunit of a type I restriction-modification system was located directly downstream of the insertion site in mutant R24. hsdM and hsdS genes encoding the modification and specificity subunits of a type I R-M system and biol. evidence for an active R-M system were detected in strain Sfi1, suggesting involvement of a type I R-M system in the resistance phenotype of R24. (c) 2000 Academic Press.

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 28 OF 53 USPATFULL on STN DUPLICATE 6
 ACCESSION NUMBER: 1999:132562 USPATFULL
 TITLE: Enzyme for phage resistance
 INVENTOR(S): Moineau, Sylvain, Bradenton, FL, United States
 Walker, Shirley A., Raleigh, NC, United States
 Vedamuthu, Ebenezer R., Bradenton, FL, United States
 Vandenberg, Peter A., Sarasota, FL, United States
 PATENT ASSIGNEE(S): Quest International Flavors & Food Ingredients Company,
 Bridgewater, NJ, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5972673 19991026
 APPLICATION INFO.: US 1997-826439 19970318 (8)
 RELATED APPLN. INFO.: Division of Ser. No. US 1995-424641, filed on 19 Apr
 1995 which is a continuation-in-part of Ser. No. US
 1994-366480, filed on 30 Dec 1994, now abandoned

DOCUMENT TYPE: Utility
 FILE SEGMENT: Granted
 PRIMARY EXAMINER: Lau, Kawai
 LEGAL REPRESENTATIVE: McLeod, Ian C.
 NUMBER OF CLAIMS: 8
 EXEMPLARY CLAIM: 1
 NUMBER OF DRAWINGS: 11 Drawing Figure(s); 11 Drawing Page(s)
 LINE COUNT: 1428

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated DNA of a Lactococcus lactis showing a SEQ ID NO:1 encoding a
 restriction and two ***modification*** enzymes (R/M SEQ ID NO: 2, 3
 and 4). The isolated DNA is used to transform sensitive dairy cultures,
 such as Lactococcus lactis and Streptococcus ***thermophilus***, to
 provide ***phage*** ***resistance***. Escherichia coli can be
 used to produce endonucleases.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 29 OF 53 USPATFULL on STN
 ACCESSION NUMBER: 1999:128345 USPATFULL
 TITLE: Use of centrifugation to prepare a retractable seal
 over reagents in a reaction container
 INVENTOR(S): Kosak, Kenneth M., 3194 S. 4400 West, West Valley City,
 UT, United States 84120
 Kosak, Matthew K., 272 E. New Century La., #F72, Salt
 Lake City, UT, United States 84115

NUMBER KIND DATE

PATENT INFORMATION: US 5968729 19991019
 APPLICATION INFO.: US 1998-49707 19980328 (9)
 RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1997-918374, filed
 on 26 Aug 1997 which is a continuation-in-part of Ser.
 No. US 1994-257567, filed on 10 Jun 1994, now patented,
 Pat. No. US 5550044, issued on 27 Aug 1996

DOCUMENT TYPE: Utility
 FILE SEGMENT: Granted
 PRIMARY EXAMINER: Naff, David M.
 NUMBER OF CLAIMS: 20
 EXEMPLARY CLAIM: 1
 LINE COUNT: 1747

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method is provided using centrifugation to prepare a seal of
 solidified wax, grease or polymer mix over an aqueous reagent in a
 reaction container such that the reagent is separated from contact with
 the atmosphere. The amount of solidified wax, grease or polymer mix is
 not sufficient when melted to a liquid to separate the reagent from
 contact with the atmosphere under gravity. A reagent and solidified wax,
 grease or polymer mix are combined in a container. During centrifugation
 and heating, the solidified wax, grease or polymer mix melts to a
 liquid, and centrifuging causes the liquid to form over the reagent a

layer that completely separates the reagent from the atmosphere. As centrifugation continues, the liquid is cooled and solidified to form the seal. Additional reagents are preferably added on top of the seal such that when the container is heated and the seal melted the upper and lower reagents mix for reaction. Preferred use of sealing reagents by this method is in polymerase chain reaction (PCR), reverse transcriptase reactions, nucleic acid sequencing, and colorimetric, fluorometric or chemiluminescent labeled immunoassays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 30 OF 53 USPATFULL on STN
ACCESSION NUMBER: 1999:81580 USPATFULL
TITLE: Isolated DNA encoding enzyme for phage resistance
INVENTOR(S): Moineau, Sylvain, Bradenton, FL, United States
Walker, Shirley A., Raleigh, NC, United States
Vedamuthu, Ebenezer R., Bradenton, FL, United States
Vandenbergh, Peter A., Sarasota, FL, United States
PATENT ASSIGNEE(S): Quest International Flavors & Food Ingredients Company,
Bridgewater, NJ, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5925388 19990720
APPLICATION INFO.: US 1997-820980 19970319 (8)
RELATED APPLN. INFO.: Division of Ser. No. US 1995-424641, filed on 19 Apr
1995 which is a continuation-in-part of Ser. No. US
1994-366480, filed on 30 Dec 1994, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Lau, Kawai
LEGAL REPRESENTATIVE: McLeod, Ian C.
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 11 Drawing Figure(s); 11 Drawing Page(s)
LINE COUNT: 1407
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated DNA of a *Lactococcus lactis* showing a SEQ ID NO:1 encoding a restriction and twp ***modification*** enzymes (R/M SEQ ID NO: 2, 3 and 4). The isolated DNA is used to transform sensitive dairy cultures, such as *Lactococcus lactis* and *Streptococcus ***thermophilus****, to provide ***phage*** ***resistance***. *Escherichia coli* can be used to produce endonucleases.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 31 OF 53 LIFESCI COPYRIGHT 2005 CSA on STN DUPLICATE 7
ACCESSION NUMBER: 1999:107245 LIFESCI
TITLE: The Genetic Relationship between Virulent and Temperate
Streptococcus thermophilus Bacteriophages: Whole Genome
Comparison of cos-Site Phages Sfi19 and Sfi21
AUTHOR: Lucchini, S.; Desiere, F.; Bruessow, H.
CORPORATE SOURCE: Nestle Research Centre, Nestec Ltd., Vers-chez-les-Blanc,
Lausanne 26, CH-1000, Switzerland; E-mail:
harald.bruessow@rdls.nestle.com
SOURCE: Virology, (19990801) vol. 260, no. 2, pp. 232-243.
ISSN: 0042-6822.
DOCUMENT TYPE: Journal
FILE SEGMENT: V; G
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The virulent cos-site *Streptococcus ***thermophilus****
bacteriophage Sfi19 has a 37,392-bp-long genome consisting of 44
open reading frames all encoded on the same DNA strand. The genome of the
temperate cos-site S. ***thermophilus*** ***phage*** ***Sfi21***
is 3.3 kb longer (40,740 bp, 53 orfs). Both genomes are very similarly
organized and differed mainly by gene deletion and DNA rearrangement
events in the lysogeny module; gene replacement, duplication, and deletion
events in the DNA replication module, and numerous point ***mutations***
. The level of point ***mutations*** varied from <1% (lysis and DNA

replication modules) to >15% (DNA packaging and head morphogenesis modules). A dotplot analysis showed nearly a straight line over the left 25 kb of their genomes. Over the right genome half, a more variable dotplot pattern was observed. The entire lysogeny module from ***Sfi21*** comprising 12 genes was replaced by 7 orfs in Sfi19, six showed similarity with genes from temperate pac-site S. ***thermophilus*** phages***. None of the genes implicated in the establishment of the lysogenic state (integrase, superinfection immunity, repressor) or remnants of it were conserved in Sfi19, while a Cro-like repressor was detected. Downstream of the highly conserved DNA replication module 11 and 13 orfs were found in Sfi19 and phi ***Sfi21***, respectively: Two orfs from ***Sfi21*** were replaced by a different gene and a duplication of the ***phage*** origin of replication in Sfi19; a further orf was only found in ***Sfi21***. All other orfs from this region, which included a second putative ***phage*** repressor, were closely related between both ***phages***. Two noncoding regions of Sfi19 showed sequence similarity to pST1, a small cryptic plasmid of S. ***thermophilus***.

L7 ANSWER 32 OF 53 CABA COPYRIGHT 2005 CABI on STN DUPLICATE 8

ACCESSION NUMBER: 1999:24829 CABA

DOCUMENT NUMBER: 19990400891

TITLE: Structural and functional analysis of pCI65st, a 6.5 kb plasmid from Streptococcus thermophilus NDI-6

AUTHOR: O'Sullivan, T.; Sinderen, D. van; Fitzgerald, G.; van Sinderen, D.

CORPORATE SOURCE: Department of Microbiology, University College, Cork, Irish Republic.

SOURCE: Microbiology (Reading), (1999) Vol. 145, No. 1, pp. 127-134. 39 ref.

ISSN: 1350-0872

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19990310

Last Updated on STN: 19990310

AB The 6.5-kb cryptic plasmid pCI65st from Streptococcus ***thermophilus*** NDI-6, a strain isolated from the Indian cultured milk dahi, was subcloned and sequenced. Five putative open reading frames [ORF] were identified. ORF1 could encode a 315-amino acid polypeptide almost identical to the RepA protein of previously sequenced S. ***thermophilus*** plasmids, indicating that pCI65st is one of the pCI94 group of small Gram-positive rolling-circle plasmids. ORF 2 and 4 were virtually identical and could specify proteins of approximately 150 amino acids with significant similarity to the small heat-shock proteins described from a variety of Gram-positive bacteria. ORF3 could encode a 415-amino acid protein similar to enolase, an enzyme involved in glycolysis and gluconeogenesis. ORF5 could encode a 412-amino acid protein which had high similarity to the HsdS (specificity) proteins of type I restriction- ***modification*** systems. Variants of strain NDI-6 which lacked pCI65st were readily isolated after subculture of the parent strain at 32[deg]C. The plasmid-bearing parent culture was significantly more ***resistant*** to a temperature shift from 42[deg]C to 62[deg]C than its plasmid-free variant and expressed proteins which corresponded with the predicted translation products from ORF2 and ORF4. In addition, plasmid-free mutants were lysed in broth by ***bacteriophages*** to which the parent culture was ***resistant***.

L7 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 9

ACCESSION NUMBER: 1998:681980 CAPLUS

DOCUMENT NUMBER: 129:299037

TITLE: DNA encoding restriction-modification enzymes for phage resistance in Lactococcus and Streptococcus

INVENTOR(S): Moineau, Sylvain; Walker, Shirley A.; Vedamuthu, Ebenezer R.; Vandenberg, Peter A.

PATENT ASSIGNEE(S): Quest International Flavors & Food Ingredients Company, USA

SOURCE: U.S., 34 pp., Cont.-in-part of U.S. Ser. No. 366,480, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5824523	A	19981020	US 1995-424641	19950419
CA 2208107	AA	19960711	CA 1995-2208107	19951229
WO 9621017	A2	19960711	WO 1995-NL448	19951229
WO 9621017	A3	19961121		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9644972	A1	19960724	AU 1996-44972	19951229
AU 712169	B2	19991028		
EP 805861	A2	19971112	EP 1995-943558	19951229
R: CH, DE, DK, ES, FR, GB, IT, LI, NL				
US 5972673	A	19991026	US 1997-826439	19970318
US 5925388	A	19990720	US 1997-820980	19970319
PRIORITY APPLN. INFO.: US 1994-366480 B2 19941230				
US 1995-424641 A 19950419				
WO 1995-NL448 W 19951229				

AB The present invention relates to transformed dairy cultures with a natural 7.8-kb plasmid pSRQ700 which was isolated from *Lactococcus lactis cremoris* DCH-4. Plasmid pSRQ700 encodes a restriction/modification system named LlaII. When introduced into a phage-sensitive dairy culture, such as *L. lactis*, pSRQ700 confers strong phage resistance against the 3 most common lactococcal phage species: 936, c2, and P335 found in dairy product ferments. The LlaII endonuclease was purified and found to cleave the palindromic sequence 5'.uparw.GATC-3'. The low copy plasmid pSRQ700 was mapped and the genetic organization of LlaII localized. Cloning and sequencing of the entire LlaII system allowed the identification of 3 open reading frames. The 3 genes (llaIIA, llaIIB, and llaIIC) overlapped and are under one promoter; a terminator was found at the end of llaIIC. The genes llaIIA and llaIIB coded for m6A-methyltransferases and llaIIC for an endonuclease. The native LlaII R/M system from *Lactococcus lactis* is also expressed by and conferred strong phage resistance to various industrial *Streptococcus thermophilus* strains. Resistance was observed against phages isolated from yogurt and Mozzarella wheys. *Escherichia coli* can be used to produce the LlaII endonuclease.

REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 34 OF 53 USPATFULL on STN
ACCESSION NUMBER: 1998:68829 USPATFULL
TITLE: Phage-resistant streptococcus
INVENTOR(S): Mollet, Beat, Mollie-Margot, Switzerland
Pridmore, David, Lausanne, Switzerland
Zwahlen, Marie Camille, Lausanne, Switzerland
PATENT ASSIGNEE(S): Nestec S.A., Vevey, Switzerland (non-U.S. corporation)

NUMBER	KIND	DATE
PATENT INFORMATION: US 5766904 19980616		
APPLICATION INFO.: US 1996-665119 19960614 (8)		

NUMBER	DATE
PRIORITY INFORMATION: EP 1995-201616 19950616	
DOCUMENT TYPE: Utility	
FILE SEGMENT: Granted	
PRIMARY EXAMINER: Railey, II, Johnny F.	
LEGAL REPRESENTATIVE: Pennie & Edmonds	
NUMBER OF CLAIMS: 10	
EXEMPLARY CLAIM: 1	
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)	

LINE COUNT: 635

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB DNA fragment of phages which are virulent towards a Streptococcus, capable of conferring on a Streptococcus containing it resistance to at least one phage, especially a fragment homologous or hybridizing to the 3.6 kb HindIII fragment present in the plasmid CNCM I-1588 or the 6.5 kb EcoRV fragment present in the plasmid CNCM I-1589. Process for making a Streptococcus resistant to at least one phage, by cloning into a vector a DNA fragment of a phage which is virulent towards a Streptococcus, capable of conferring on a Streptococcus resistance to at least one phage and introducing the vector into a Streptococcus.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 35 OF 53 FROSTI COPYRIGHT 2005 LFRA on STN

ACCESSION NUMBER: 465948 FROSTI

TITLE: Bacteriophages and lactic acid bacteria.

AUTHOR: Josephsen J.; Neve H.

SOURCE: Lactic acid bacteria: microbiology and functional aspects. (2nd edition), Published by: Marcel Dekker, New York, 1998, 385-436 (many ref.)
Salminen S.; von Wright A.
ISBN: 0-8247-0133-X

DOCUMENT TYPE: Book Article

LANGUAGE: English

AB ***Bacteriophages*** are a major problem for the fermentation industry, as ***bacteriophages*** can inhibit the growth of starter cultures. Food fermentations cannot be performed under strict aseptic conditions and therefore the control of ***phage*** is extremely important. An overview of ***bacteriophages*** is provided. ***Phage*** composition and morphology, the life cycle of ***phages*** (including the lytic and lysogenic cycles) and the origin of ***phages*** are discussed. Consideration is then given to ***phages*** that attack Lactococcus lactis, lactobacilli, Streptococcus ***thermophilus*** and Leuconostoc (including the classification and characterization of these ***phages***); mechanisms of ***phage*** ***resistance*** by lactic acid bacteria (adsorption inhibition, DNA-penetration blocking, restriction/ ***modification*** and abortive infection); modern ***phage*** control (the transfer of ***phage*** ***resistance*** determinants, antisense-RNA strategies and ***phage*** -encoded ***resistance***); ***phage*** counterdefense strategies; and ***phages*** as genetic tools (e.g. the construction of site-specific integration systems).

L7 ANSWER 36 OF 53 FROSTI COPYRIGHT 2005 LFRA on STN

ACCESSION NUMBER: 480496 FROSTI

TITLE: Phage resistance mechanisms in lactic acid bacteria.

AUTHOR: Allison G.E.; Klaenhammer T.R.

SOURCE: International Dairy Journal, 1998, (March), 8 (3),
207-226 (many ref.)
ISSN: 0958-6946

DOCUMENT TYPE: Journal

LANGUAGE: English

SUMMARY LANGUAGE: English

AB ***Bacteriophage*** infection of lactic acid bacteria, such as Lactococcus lactis and Streptococcus ***thermophilus***, are a continuing concern in the production of fermented dairy products. The presence of ***bacteriophages*** can cause slow acid production or failure of fermentation. This review examines recent progress in efforts to protect dairy starter cultures. Naturally occurring ***bacteriophage*** - ***resistance*** mechanisms and novel ***phage*** - ***resistant*** mechanisms are described. Interactions of the ***bacteriophages*** with the host and natural ***phage*** defence mechanisms are discussed. The genetic ***modification*** of lactic acid bacteria for a range of beneficial functions and activities is also considered.

L7 ANSWER 37 OF 53 USPATFULL on STN

ACCESSION NUMBER: 97:94101 USPATFULL

TITLE: Compositions and methods for phage resistance in dairy fermentations
INVENTOR(S): Broadbent, Jeff R., Smithfield, UT, United States
Ober, Craig J., Liberty, UT, United States
Caldwell, Shelby, Syracuse, UT, United States
PATENT ASSIGNEE(S): Utah State University, Office of Technology Commercialization, Logan, UT, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5677166 19971014
APPLICATION INFO.: US 1995-462017 19950605 (8)
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wax, Robert A.
ASSISTANT EXAMINER: Slobodyansky, Elizabeth
LEGAL REPRESENTATIVE: Thorpe North & Western, L.L.P.
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 635

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A latococcal- and streptococcal-phage-resistant starter culture for fermenting milk comprises a food-grade bacterium from the genera *Pediococcus*, *Leuconostoc*, *Lactococcus*, *Streptococcus*, or *Lactobacillus* transformed with a genetic element containing genes for a lactose fermentation phenotype. A method of making a lactococcal-phage-resistant starter culture comprises transforming a non-lactose fermenting, food-grade bacterium with a genetic element carrying determinants for a lactose fermentation phenotype. A method of making cheese with lactococcal-phage-resistant starter culture is also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 38 OF 53 USPATFULL on STN
ACCESSION NUMBER: 97:56530 USPATFULL
TITLE: Reactions using heat-releasable reagents in wax beads
INVENTOR(S): Kosak, Kenneth M., 3194 S. 4400 West, West Valley City, UT, United States 84120
Kosak, Matthew K., 3194 S. 4400 West, West Valley City, UT, United States 84120

NUMBER KIND DATE

PATENT INFORMATION: US 5643764 19970701
APPLICATION INFO.: US 1995-396257 19950301 (8)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1992-936357, filed on 27 Aug 1992, now patented, Pat. No. US 5413924 which is a continuation-in-part of Ser. No. US 1992-835758, filed on 13 Feb 1992, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Naff, David M.
LEGAL REPRESENTATIVE: Madson & Metcalf
NUMBER OF CLAIMS: 28
EXEMPLARY CLAIM: 1,15
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1897

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A reagent such as a heat resistant enzyme is entrapped in a material such as wax or a liposome that releases the reagent when heated so the reagent is available for reaction. In a preferred embodiment, wax beads containing the reagent are prepared by injecting the reagent into beads of molten wax and cooling to solidify the wax. In another embodiment, droplets of a solution of the reagent are dropped through a layer of molten wax to coat the droplets with the wax and the coated droplets are cooled to solidify the wax. The entrapped reagents have application in nucleic acid hybridizations, polymerase chain reactions (PCR), reverse transcriptase reactions (RTR), nucleic acid sequencing, and product

generating reactions such as colorimetric, fluorometric and chemiluminescent enzyme labeled immunoassays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 39 OF 53 CABA COPYRIGHT 2005 CABI on STN

ACCESSION NUMBER: 97:10211 CABA

DOCUMENT NUMBER: 19970400146

TITLE: Federal Dairy Research Centre, Kiel. Annual report
1995

Bundesanstalt für Milchforschung, Kiel.
Jahresbericht 1995

CORPORATE SOURCE: Germany, Bundesanstalt für Milchforschung, Kiel;
Hermann-Weigmann-Strasse 1, 24103 Kiel, Germany.

SOURCE: Bundesanstalt für Milchforschung, Kiel.
Jahresbericht 1995, (1996) pp. 104.
Publisher: Forschungszentrum für Milch und
Lebensmittel Weihenstephan. Freising

PUB. COUNTRY: Germany, Federal Republic of

DOCUMENT TYPE: Report; Company Publication

LANGUAGE: German

SUMMARY LANGUAGE: English

ENTRY DATE: Entered STN: 19970310

Last Updated on STN: 19970310

AB Research projects under way at the 7 institutes of the Federal Dairy Research Centre, Kiel, are reported for 1995. The Institute of Hygiene carried out 5 projects concerned with animal health and mastitis, medical microbiology, zoonoses and ***immunology***, biology and biochemistry of saprophytes, residues and ecotoxicology, and the detection and significance of antimicrobial residues in milk. The Institute for Chemistry and Physics reported on 31 projects covering a wide range of studies on the chemistry and functional properties of milk and milk products, ***immunological*** and health aspects of milk components as well as analytical methods. Research at the Institute of Microbiology included studies of the physiology of lactic acid bacteria, analysis of DNA in *Streptococcus thermophilus*, detection of genetically-engineered microorganisms, cheese yeasts, moulds and surface bacteria, ***bacteriophages***, genetically- ***modified*** starter cultures, gene probes and gene transfer. The 25 projects reported by the Institute of Physiology and Biochemistry of Nutrition included research on the digestion and metabolism of milk proteins and fatty acids labelled with heavy isotopes in miniature pigs or humans, lipid metabolism, lactose digestion and malabsorption, milk protein allergy, calcium and bone metabolism, studies on various vitamins, and zinc absorption. The Institute of Process Engineering contributed 9 projects including milk protein microfiltration and fractionation, storage and stability of evaporated milk and coffee cream, homogenization of cream, equipment testing and cleaning processes. The Institute for Business Economics and Market Research for Food Processing focused on data and modelling, treatment and distribution of products, environmental economy and structural aspects of the food processing industry. The work of the Department of Documentation and Information, including the library and computer centre, is described. Further information is given on organization, staff, scientific collaboration and publications.

L7 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:531819 CAPLUS

DOCUMENT NUMBER: 125:160389

TITLE: DNA encoding restriction-modification enzymes for
phage resistance in *Lactococcus* and *Streptococcus*

INVENTOR(S): Moineau, Sylvain; Walker, Shirley A.; Vedamuthu,
Ebenezer R.; Vandenberg, Peter A.

PATENT ASSIGNEE(S): Quest International B.V., Neth.

SOURCE: PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9621017	A2	19960711	WO 1995-NL448	19951229
WO 9621017	A3	19961121		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5824523	A	19981020	US 1995-424641	19950419
AU 9644972	A1	19960724	AU 1996-44972	19951229
AU 712169	B2	19991028		
EP 805861	A2	19971112	EP 1995-943558	19951229
R: CH, DE, DK, ES, FR, GB, IT, LI, NL				
PRIORITY APPLN. INFO.: US 1994-366480 A 19941230				
US 1995-424641 A 19950419				
WO 1995-NL448 W 19951229				

AB The present invention relates to transformed dairy cultures with a natural 7.8-kb plasmid pSRQ700 which was isolated from *Lactococcus lactis cremoris* DCH-4. Plasmid pSRQ700 encodes a restriction/modification system named LlaII. When introduced into a phage-sensitive dairy culture, such as *L. lactis*, pSRQ700 confers strong phage resistance against the 3 most common lactococcal phage species: 936, c2, and P335 found in dairy product fermns. The LlaII endonuclease was purified and found to cleave the palindromic sequence 5'.uparw.GATC-3'. The low copy plasmid pSR1700 was mapped and the genetic organization of LlaII localized. Cloning and sequencing of the entire LlaII system allowed the identification of 3 open reading frames. The 3 genes (llaIIA, llaIIB, and llaIIC) overlapped and are under one promoter; a terminator was found at the end of llaIIC. The genes llaIIA and llaIIB coded for m6A-methyltransferases and llaIIC for an endonuclease. The native LlaII R/M system from *Lactococcus lactis* is also expressed by and conferred strong phage resistance to various industrial *S. thermophilus* strains. Resistance was obsd. against phages isolated from yogurt and Mozzarella wheys. *Escherichia coli* can be used to produce the LlaII endonuclease.

L7 ANSWER 41 OF 53 USPATFULL on STN

ACCESSION NUMBER: 96:77700 USPATFULL

TITLE: Preparation of wax beads containing a reagent using liquid nitrogen for cooling and solidifying

INVENTOR(S): Kosak, Kenneth M., 3194 S. 4400 West, West Valley City, UT, United States 84120
Kosak, Matthew K., 3194 S. 4400 West, West Valley City, UT, United States 84120

NUMBER	KIND	DATE
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PATENT INFORMATION:	US 5550044	19960827
APPLICATION INFO.:	US 1994-257567	19940610 (8)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1992-936357, filed on 27 Aug 1992, now patented, Pat. No. US 5413924 which is a continuation-in-part of Ser. No. US 1992-835758, filed on 13 Feb 1992, now abandoned		

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted

PRIMARY EXAMINER: Naff, David M.

NUMBER OF CLAIMS: 17

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)

LINE COUNT: 1233

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Droplets of molten wax or waxy polymer containing a reagent are dropped onto the surface of liquid nitrogen, the droplets remain on the surface until solidified and the droplets are removed from the surface before they sink into the liquid nitrogen to provide beads containing the reagent. The reagent can be any material that can be entrapped in the beads and does not undergo excessive inactivation when the beads are melted by heating to release the reagent. Examples of reagents are heat

resistant enzymes, enzyme substrates, metal salts, oligonucleotides, inclusion compounds, surfactants, emulsifiers, antioxidants, stabilizers, drugs, antibiotics, antibodies and antigens. An apparatus for producing the beads contains a plurality of channels through which liquid nitrogen flows from a reservoir. Each channel passes under a dispenser tip from which droplets are formed and released onto the surface of flowing liquid nitrogen. Liquid nitrogen containing the beads flows from each channel into a pipe and then over a separation sieve. The beads can be used in various in vitro chemical, biochemical and immunological reactions including the PCR, where the reagent is released by heating and melting the beads. The beads have all the combined features for commercial use of: (a) spherical shape, (b) uniform, narrow size range (i.e. 5% or less deviation), (c) free of water contamination, (d) contain an aqueous reagent, and (e) can be produced at high speed (i.e. over 1000 per min.).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 42 OF 53 USPATFULL on STN

ACCESSION NUMBER: 95:40862 USPATFULL

TITLE: Preparation of wax beads containing a reagent for release by heating

INVENTOR(S): Kosak, Kenneth M., 3194 S. 4400 W., West Valley City, UT, United States 84120
Kosak, Matthew K., 3194 S. 4400 W., West Valley City, UT, United States 84120

NUMBER KIND DATE

PATENT INFORMATION: US 5413924 19950509
APPLICATION INFO.: US 1992-936357 19920827 (7)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1992-835758, filed on 14 Feb 1992, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Naff, David M.
LEGAL REPRESENTATIVE: Madson & Metcalf
NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 1,11
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1742

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A reagent such as an enzyme is entrapped in a material such as wax or a liposome that releases the reagent when heated. In a preferred embodiment, wax beads containing the reagent are prepared by injecting the reagent into beads of molten wax and cooling to solidify the wax. In another embodiment, droplets of a solution of the reagent are dropped through a layer of molten wax to coat the droplets with the wax and the coated droplets are cooled to solidify the wax. The entrapped reagents have application in nucleic acid hybridizations, polymerase chain reactions (PCR), reverse transcriptase reactions (RTR), nucleic acid sequencing, and product generating reactions such as colorimetric, fluorometric and chemiluminescent enzyme labeled immunoassays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 43 OF 53 CABA COPYRIGHT 2005 CABI on STN DUPLICATE 10

ACCESSION NUMBER: 95:187608 CABA

DOCUMENT NUMBER: 19950405168

TITLE: Expression of a Lactococcus lactis phage resistance mechanism by Streptococcus thermophilus

AUTHOR: Moineau, S.; Walker, S. A.; Holler, B. J.;
Vedamuthu, E. R.; Vandenberg, P. A.

CORPORATE SOURCE: Quest International, Sarasota, Florida 34243, USA.

SOURCE: Applied and Environmental Microbiology, (1995) Vol. 61, No. 7, pp. 2461-2466. 51 ref.
ISSN: 0099-2240

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19951115

Last Updated on STN: 19951115

AB The 7.8-kb lactococcal plasmid pSRQ700 encodes the LlaI restriction/
modification system which recognizes and cleaves the sequence
3[prime]-GATC-5[prime]. When the plasmid pSRQ700 is introduced into a
phage-sensitive *Lactococcus lactis* strain, strong ***phage***
resistance is conferred by the LlaI system. In this paper, it was
shown that pSRQ700 cannot replicate in *Streptococcus thermophilus*.
However, if cloned into the vector pNZ123, the native LlaI system is
expressed and strong ***phage*** ***resistance*** is conferred to
various industrial *S. thermophilus* strains. ***Resistance***
against ***phages*** isolated from yoghurt and Mozzarella whey was
observed. To the authors' knowledge, this is the first report of increased
phage ***resistance*** in *S. thermophilus*.

L7 ANSWER 44 OF 53 CABA COPYRIGHT 2005 CABI on STN

ACCESSION NUMBER: 96:17898 CABA

DOCUMENT NUMBER: 19960400413

TITLE: Genetically-modified organisms: what future?

Organismes genetiquement modifies: quel futur?

AUTHOR: Roussiere, H.

SOURCE: Revue Laitiere Francaise, (1995) No. 547, pp. 19-20.

1 ref.

ISSN: 0035-3590

DOCUMENT TYPE: Journal

LANGUAGE: French

ENTRY DATE: Entered STN: 19960216

Last Updated on STN: 19960216

AB The use of genetically- ***modified*** microorganisms in milk products
is permitted by law in France, but the dairy industry has been slow to
make use of genetic engineering techniques. Research being carried out
into genetically- ***modified*** foods and microorganisms in Europe is
outlined and specific mention is made of work being carried out by various
laboratories of the Institut National de la Recherche Agronomique (France)
including studies on: *Lactococcus* species; ***bacteriophage***
resistance; mechanisms of infection by ***bacteriophages***;
regulation of gene expression; and proteolytic enzymes of *Lactococcus*
lactis and *Streptococcus thermophilus*. Benefits to the dairy
industry of genetic techniques, which could be used to shorten processing
times or to control flavour and texture, should be considerable but have
yet to be adopted on a commercial scale in France.

L7 ANSWER 45 OF 53 FROSTI COPYRIGHT 2005 LFRA on STN

ACCESSION NUMBER: 321029 FROSTI

TITLE: Restriction/modification in *Streptococcus*

thermophilus: isolation and characterization of a type

II restriction endonuclease Sth455I.

AUTHOR: Guimont C.; Henry P.; Linden G.

SOURCE: Applied Microbiology and Biotechnology, 1993, 39 (2),
216-220 (27 ref.)

DOCUMENT TYPE: Journal

LANGUAGE: English

SUMMARY LANGUAGE: English

AB ***Phage*** attack is reported to be a major problem in industrial
fermentation. ***Phage*** ***resistance*** mechanisms of lactic
acid bacteria have been studied. There is evidence for the presence of
restriction/ ***modification*** in the case of *Streptococcus*
thermophilus. *S. thermophilus* strain CNRZ 455 produces
a type II restriction endonuclease designated Sth455I. In this study
this enzyme was isolated from cell extracts, and optimal reaction
conditions for Sth455I were determined. The enzyme exhibited restriction
activity on the DNA of three ***bacteriophages*** of *S.*
thermophilus and no activity on the ***phage*** lytic for
strain CNRZ 455. The restriction/ ***modification*** system for this
strain is discussed.

L7 ANSWER 46 OF 53 CABA COPYRIGHT 2005 CABI on STN DUPLICATE 11

ACCESSION NUMBER: 93:14183 CABA

DOCUMENT NUMBER: 19930457500

TITLE: Bacteriophages of *Streptococcus salivarius* ssp.

thermophilus: characterization of hereditary

relationships and determination of virus-host
interaction

AUTHOR: Sebastiani, H.; Jager, H.
CORPORATE SOURCE: Bundesanstalt für Alpenlandische Milchwirtschaft,
6200 Rotholz, Austria.
SOURCE: Milchwissenschaft, (1993) Vol. 48, No. 1, pp. 25-29.
35 ref.
ISSN: 0026-3788
DOCUMENT TYPE: Journal
LANGUAGE: English
SUMMARY LANGUAGE: German
ENTRY DATE: Entered STN: 19941101
Last Updated on STN: 19941101

AB ***Bacteriophage*** strains of *Streptococcus salivarius* var.
thermophilus were divided into 3 subgroups with respect to their
host range. This classification was confirmed by a correlation between the
host range of the ***phages*** and the restriction enzyme patterns of
their DNA. DNA-DNA-homology from 100 to 60% was found between
bacteriophages of different subgroups. General ***phage***
resistance was due to the presence of a temperate ***phage***
in one case. The induced prophage was morphologically indistinguishable
from the virulent ***phages*** of *S. salivarius* var.
thermophilus and revealed the same host range as the
phages of subgroup 1. The DNA of all ***bacteriophages***
proved to be ***modified*** in the same way as the DNA of their hosts
by a restriction/ ***modification*** system. This enzyme system, which
methylates cytosine in the GATC sequence, was found in all host strains of
S. salivarius var. ***thermophilus*** except 1.

L7 ANSWER 47 OF 53 CABA COPYRIGHT 2005 CABI on STN DUPLICATE 12

ACCESSION NUMBER: 92:62133 CABA
DOCUMENT NUMBER: 19920452907
TITLE: Different bacteriophage resistance mechanisms in
Streptococcus salivarius subsp. *thermophilus*
AUTHOR: Larbi, D.; Decaris, B.; Simonet, J. M.
CORPORATE SOURCE: Laboratoire de Genetique et Microbiologie, Faculte
des Sciences, Universite Nancy I, BP 239, 54506
Vandoeuvre-les-Nancy, France.
SOURCE: Journal of Dairy Research, (1992) Vol. 59, No. 3,
pp. 349-357. 37 ref.
ISSN: 0022-0299
DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 19941101
Last Updated on STN: 19941101

AB *Streptococcus salivarius* var. ***thermophilus*** strain NST5 exhibited
a temp.-dependent defence mechanism against the virulent
bacteriophages [phi]B1.2 and [phi]A1.1. It was active at 42 but
not at 30[deg]C, as demonstrated by a significant increase of both plaque
size and efficiency of plaquing. This defence mechanism did not affect
host-dependent ***phage*** replication and did not interfere with
phage adsorption to NST5. These results suggest that it interfered
with ***phage*** development. The ***phages*** [phi]T33, [phi]T58,
[phi]D1, [phi]T21 and [phi]T9, belonging to the same ***phage*** type
as [phi]B1.2, were examined for their ability to infect NST3 and NST5.
Restriction ***modification*** systems of different specificity were
detected in NST3 and NST5; host-dependent ***phage*** replication was
detected at 30 and 42[deg]C; an abortive defence mechanism was detected in
NST5, which was active at 42 but not 30[deg]C, and was independent of
restriction ***modification*** action or interference with
phage adsorption. These investigations of ***phage***-host
interactions showed that the 2 *S. salivarius* var. ***thermophilus***
strains studied avoided attack by related ***bacteriophages*** by
evolving at least 3 different ***resistance*** systems.

L7 ANSWER 48 OF 53 CABA COPYRIGHT 2005 CABI on STN

ACCESSION NUMBER: 94:61407 CABA
DOCUMENT NUMBER: 19940402722
TITLE: State of research concerning *Streptococcus*
salivarius ssp. *thermophilus* and *Lactobacillus*

delbrueckii bacteriophage
 AUTHOR: Gillies, K. O.
 CORPORATE SOURCE: Marschall Products, P. O. Box 592, Madison, WI
 53701, USA.
 SOURCE: Proceedings from the 29th Annual Marschall Italian
 Cheese Seminar, 16 & 17 September, 1992, (1992) pp.
 45-50. 20 ref.
 Publisher: Rhone-Poulenc. Madison
 Meeting Info.: Proceedings from the 29th Annual
 Marschall Italian Cheese Seminar, 16 & 17 September,
 1992.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Conference Article
 LANGUAGE: English
 ENTRY DATE: Entered STN: 19941101
 Last Updated on STN: 19941101

AB The current situation as regards research into ***bacteriophages*** of
 starter cultures used in the manufacture of Italian-style cheeses such as
 Mozzarella is examined and the possibility of using molecular biology
 techniques to combat ***bacteriophages*** is discussed. The number of
 groups engaged in research into ***bacteriophages*** and
 bacteriophage - ***resistance*** in lactic acid bacteria such as
 Streptococcus salivarius var. ***thermophilus*** and Lactobacillus
 delbrueckii remains small, but a coherent view of the characteristics of
 thermophilic ***bacteriophages*** is emerging. This should assist in
 the proper management of Italian cheese starter cultures and should also
 establish a basis for any future attempts to enhance ***phage***
 resistance via strain ***modification***.

L7 ANSWER 49 OF 53 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED.
 on STN

ACCESSION NUMBER: 1991-0378608 PASCAL
 TITLE (IN ENGLISH): Genetic and biological studies of nine Streptococcus
 salivarius ssp thermophilus bacteriophages. Studies of
 host-phage interactions
 TITLE (IN FRENCH): Etudes genetique et biologique de neuf bacteriophages
 de Streptococcus salivarius ssp thermophilus. Etudes
 des interactions phages-bacteries
 AUTHOR: LARBI DEROUICHE LARBI Dejlà; SIMONET Jean-Marc (dir.
 the)
 SOURCE: (1991), 208 refs.
 147 p.
 Dissertation Information: Nancy 1, Th. doct. : Genet.,
 91 NAN1 0013
 DOCUMENT TYPE: Dissertation
 BIBLIOGRAPHIC LEVEL: Monographic
 COUNTRY: France
 LANGUAGE: French
 AVAILABILITY: INIST-T 76052
 AN 1991-0378608 PASCAL

ABFR Dans cette etude neuf ***bacteriophages*** de Streptococcus
 salivarius ssp. ***thermophilus*** ont ete caracterises. Leur genome
 est constitue d'ADN double brin lineaire possedant des extremités
 cohesives. Sur la base de leurs profils de restriction, ces
 phages ont ete classes en deux souches phagiques. L'etude
 genetique et biologique de deux ***bacteriophages***, representatifs
 de ces deux souches montre qu'ils sont tres apparentes. L'etude des
 interactions ***phages***-bacteries suggere la presence de systemes
 de ***resistance*** varies chez Streptococcus salivarius ssp.
 thermophilus, notamment l'existence de systemes de restriction/
 modification et la presence d'un systeme de ***resistance***
 thermo-dependant qui induirait une infection abortive. Par ailleurs, ces
 mecanismes n'affectent pas tous les ***phages*** d'une meme souche,
 ce qui suggere que les ***phages*** peuvent developper des parades a
 ces mecanismes

L7 ANSWER 50 OF 53 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED.
 on STN

ACCESSION NUMBER: 1991-0324751 PASCAL
 TITLE (IN ENGLISH): Multiple modification/restriction systems in

Streptococcus thermophilus: purification and characterization of SthTI, a type II restriction endonuclease

TITLE (IN FRENCH): La restriction/modification chez Streptococcus thermophilus: existence de systemes multiples, purification et caracterisation de SthTI, une endonuclease de restriction de type II

AUTHOR: BENBADIS Laurent; HARTLEY Donna (dir. the)

SOURCE: (1990), 187 refs.

145 p.

Dissertation Information: Paris 07, Th. doct : Microbiol., 90 PA07 7115

DOCUMENT TYPE: Dissertation

BIBLIOGRAPHIC LEVEL: Monographic

COUNTRY: France

LANGUAGE: French

AVAILABILITY: INIST-T 74880

AN 1991-0324751 PASCAL

ABFR Streptococcus ***thermophilus*** est utilise en symbiose avec Lactobacillus delbruecki subsp. bulgaricus lors de la fermentation qui transforme le lait en yaourt. Ving-quatre ***bacteriophages*** virulents de Streptococcus ***thermophilus*** isoles a partir de fermentations, ou la production d'acide lactique etait ralentie voire arreee, dans differentes usines produisant des yaourts ont ete compares sur la base de leurs spectres d'hotes, leurs genomes et leurs proteines majeures. Nous avons determine le spectre d'hote de huit ***phages*** representatifs sur une collection de cent-quatre-vingt-quinze souches de Streptococcus ***thermophilus***. Chez certaines souches, nous avons observe une replication des ***phages*** controlee par l'hote. Des systemes de restriction/ ***modification*** multiples existent chez Streptococcus ***thermophilus***. Nous avons purifie une endonuclease de restriction de type II qui reconnaît specifiquement la sequence: 5'-C-C.fleche (bas).W-G-G-3', 3'-G-G-W.fleche (haut).C-C-5' (W=A ou T) et qui la coupe suivant les fleches. Cette enzyme nommee SthTI est une proteine dont le poids moleculaire apparent par SDS-PAGE est estime a 41000. Nous avons teste la susceptibilite in vitro a la coupure par SthTI d'ADN extraits des ***phages*** Streptococcus ***thermophilus***. Il existe une correlation parfaite entre la ***resistance*** /sensibilite aux ***phages*** de la souche dont est extraite SthTI et la sensibilite/ ***resistance*** de leur ADN a SthTI

L7 ANSWER 51 OF 53 CABA COPYRIGHT 2005 CABI on STN

ACCESSION NUMBER: 92:37395 CABA

DOCUMENT NUMBER: 19920451178

TITLE: Characterization and comparison of virulent bacteriophages of Streptococcus thermophilus isolated from yogurt

AUTHOR: Benbadis, L.; Faalen, M.; Slos, P.; Fazel, A.; Mercenier, A.

CORPORATE SOURCE: A. Mercenier, Transgene SA, Strasbourg, France.

SOURCE: Biochimie, (1990) Vol. 72, No. 12, pp. 855-862. 44 ref.

ISSN: 0300-9084

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19941101

Last Updated on STN: 19941101

AB Seven virulent ***bacteriophages*** of Streptococcus ***thermophilus*** were characterized at the molecular level, and classified into 2 subgroups (A and B) by DNA/DNA hybridization experiments and analysis of their structural proteins. Two representatives of subgroups A and B were compared with 3 representatives of Neve's subgroups I, II and III by Southern blot experiments. These isometric-headed ***phages*** possess a double-stranded DNA genome varying between 30-44 kb (kb) pairs. Subgroup A is composed of 3 ***phages*** ([Phi] 57 as representative) with similar structural proteins as determined by SDS-PAGE electrophoresis (estimated MW of 31 000 and 27 500 for ***phage*** [Phi] 57, and 32 000 and 27 000 for the 2 others). A common structural protein of 43 000 was found for ***phages*** of subgroup B. ***Phages*** [Phi] 57 (subgroup A) and a 10/J9 or PO (Neve's subgroups I

or II resp.) belonged to the same subgroup as determined by DNA/DNA hybridization experiments. Partial DNA homology was detected among all the ***phages*** tested except for ***phage*** [Phi] ST27 of A. W. Jarvis. ***Phage*** -host interactions were also investigated by cross-propagation of the 7 ***phages*** studied on different indicator strains. A complete lack of correlation existed between the DNA homology grouping of the ***phages*** and their host range. Various restriction- ***modification*** systems were detected in some of the Streptococcus ***thermophilus*** strains. It is considered that this work will be of use in developing ***phage*** - ***resistant*** starters for milk products.

L7 ANSWER 52 OF 53 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED.

on STN

ACCESSION NUMBER: 1995-0355573 PASCAL

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TITLE (IN ENGLISH): Study of lactic bacteria phage resistance mechanisms

TITLE (IN FRENCH): Etude des mecanismes de resistance aux phages chez les bacteries lactiques

AUTHOR: PREVOTS Fabien; RITZENTHALER P. (dir.)

CORPORATE SOURCE: Universite de Toulouse 3, Toulouse, France (tutelle)

SOURCE: (1989-12), 288 refs.

161 p.

Dissertation Information: Universite de Toulouse 3.

Toulouse. FRA, Th. doct., 89TOU30231

DOCUMENT TYPE: Dissertation

BIBLIOGRAPHIC LEVEL: Monographic

COUNTRY: France

LANGUAGE: French

SUMMARY LANGUAGE: French; English

AVAILABILITY: INIST-T 96662, T89TOU30231

AN 1995-0355573 PASCAL

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ABFR Les fermentations industrielles realisees par les bacteries lactiques sont souvent perturbees par le developpement de ***bacteriophages*** , qui vont provoquer un ralentissement ou un arret de la production d'acide lactique par suite de la lyse bacterienne. Une collection de ***bacteriophages*** de differentes especes de bacteries lactiques (Lactococcus lactis ssp lactis, Lactococcus lactis ssp cremoris, Streptococcus salivarius ssp ***thermophilus***) a d'abord ete constituee a partir de diverses origines. Ces ***phages*** ont ete caracterises d'une facon tres detaillee, aussi bien sur le plan morphologique que moleculaire: etude au microscope electronique, composition en proteines, profils de restriction, hybridation ADN-ADN. Cette collection est hautement representative de l'ensemble des ***phages*** que l'on peut rencontrer lors des accidents de fermentation dans les industries laitières. Cette collection de ***bacteriophages*** bien caracterises nous a permis d'aborder l'etude des mecanismes de ***resistance*** aux ***bacteriophages*** presents naturellement chez les lactocoques. Des etudes de lysotypie ont permis d'identifier des souches insensibles a tous les ***bacteriophages*** : certaines de ces souches sont capables de transferer par conjugaison le caractere de ***resistance*** a une souche sensible. Chacun de ces mecanismes a ete teste pour sa thermosensibilite et pour la ***resistance*** qu'il confere aux differentes familles de ***phages*** de Lactococcus lactis. Les plasmides responsables de ces mecanismes de ***resistance*** ont ete mis en evidence par electrophorese en champ pulse. Ils ont une taille superieure a 50 kilobases et sont conjugatifs. Leur carte physique a ete etablie. Ces travaux ouvrent la voie a la construction de souches de bacteries lactiques presentant une ***resistance*** accrue aux ***bacteriophages*** par une approche 'naturelle' sans faire appel aux techniques de recombinaison genetique in vitro. L'etude de milieux de culture inhibiteurs de ***phages*** a egalement ete abordee. Les phosphates presents dans ces milieux en chelant les ions calcium, retardent la propagation des ***phages*** dont le developpement necessite du calcium. Par contre, ces milieux sont sans effet sur les autres ***phages*** . Enfin, des techniques de transfert de materiel genetique, transfection et transformation, ont ete mises au point chez

les lactocoques. Les deux genes du systeme de restriction-
 modification heterologue EcoRI ont ete introduits dans
 Lactococcus lactis grace a la construction d'un plasmide-navette E.
 coli/L. lactis. L'absence d'expression de ces deux genes dans l'hote L.
 lactis a conduit au clonage en amont de ceux-ci de promoteurs de
 phages de lactocoques

L7 ANSWER 53 OF 53 CABA COPYRIGHT 2005 CABI on STN
 ACCESSION NUMBER: 84:41912 CABA
 DOCUMENT NUMBER: 19840489747
 TITLE: Genetics of dairy cultures
 AUTHOR: Davies, F. L.; Gasson, M. J.
 CORPORATE SOURCE: National Inst. for Res. in Dairying, Shinfield,
 Reading RG2 9AT, UK.
 SOURCE: Irish Journal of Food Science and Technology, (1983)
 Vol. 7, No. 1, pp. 49-60. 69 ref.
 Price: Conference paper; Journal article
 ISSN: 0332-0375
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 ENTRY DATE: Entered STN: 19941101
 Last Updated on STN: 19941101

AB Plasmids have been found in all group N streptococci (in which the plasmid
 profiles show a marked specificity) and in some Lactobacillus strains, but
 rarely in Streptococcus ***thermophilus***. The function of these
 plasmids, transfer of genes by conjugation, transduction, protoplast
 fusion or transformation, gene cloning, and the role of lysogeny and
 restriction/ ***modification*** systems in response to
 bacteriophage attack, are discussed. Possible applications of
 plasmid transfer and genetic ***modification*** are suggested; these
 include the control of lactic acid production, development of starters
 capable of producing increased levels of proteinase and lipase, enlarging
 the ***phage*** ***resistance*** spectra of starters, and using
 lactobacilli as carriers of cloned genes to be expressed in the intestinal
 tract.

=> d his

L1 QUE THERMOPHILUS

FILE 'CAPLUS, SCISEARCH, BIOSIS, CABA, USPATFULL, FSTA, MEDLINE, EMBASE,
 PASCAL, LIFESCI, ESIOBASE, BIOTECHNO, FROSTI, AGRICOLA, WPIDS' ENTERED
 AT 12:46:03 ON 24 NOV 2005

L2 35256 S L1
 L3 2280 S (RESISTAN? OR IMMUN?) (S) L1
 L4 421 S (PHAGE# OR BACTERIOPHAGE# OR SFI1 OR SFICL6 OR SFI21) (S) L3
 L5 83 S (MODIFI? OR MUTAT?)(S) L4
 L6 0 S (ORF90 OR ORF394 OR ORF269 ORF1560) (S) L5
 L7 53 DUP REM L5 (30 DUPLICATES REMOVED)

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